

Date: April 25, 2003

To: Mr. Richard H. Karney, P.E.
Manager, Energy Star Program
Building Technologies Program
US Department of Energy
1000 Independence Ave SW
Washington, DC 20585

From: Mr. Gary Gordon
CEO/President
Envirotech Systems Worldwide, Inc.
<http://www.envirotech.com>

Re: **Comments for Energy Star Water Heater Program**

The purpose of these comments are to educate D&R International, the Department of Energy, the Energy Star Partners and the entire water heating and plumbing industry that there is indeed a thriving market for instantaneous electric water heaters, which significantly exceed current energy efficiency standards and are well suited for both residential and commercial applications.

Envirotech would like to propose the following changes to the Department of Energy's 10 CRF Part 430 Energy Conservation for Consumer Products: Test Procedure for Water Heaters; Final Rule, passed in May 1998.

Envirotech would like to see the Maximum Proposed Input Power Rating to be increased from 12 kW to 29 kW. This would allow a new category of highly energy efficient instantaneous water heaters to be included in the Energy Star program.

The draw rate would allow instantaneous water heaters to meet the 3-5 gallons per minute minimum flow rate for whole house water heating applications. The flow rate of 3-5 gallons per minute would provide an endless supply of hot water that can be maintained regardless of the number of faucets or appliances simultaneously requesting hot water.

Previous guidelines were built around storage water tank systems that required low amp draw rates, but required a continuous power draw. New technologies are available now that require higher amp draw rates, but can save an enormous amount of energy by heating water only as it is needed.

(more)

For example, morning shower time puts a continuous draw on electricity power grids for several hours each morning as people take showers, use up their hot water supplies, which their water heaters then slowly replenish during a minimum of one hour of hot water recovery time. Then after the hot water supply is replenished, tank storage systems must continuously heat the water until the next draw of hot water is requested.

Maintaining hot water in a tank wastes an enormous amount of energy, most of which is wasted because no one needs hot water during the day when parents are at work and kids are at school or at night while the family sleeps. The same is true of business facilities on the weekends when no one is at work. Heating water when it is not needed is a severe waste of energy.

There are many other problems associated with storing water in hot water tank. They include disease, sediment deposits, ruptured water tanks, flooding, accidental death and scalding and fires. All are directly related to storing water in a tank and continuously heating it. Installing a tankless or instantaneous water heater can eradicate all of these potential problems.

An electric tankless water heater has an energy factor of 0.98 and maintains that rating throughout the product's 25-30 year life cycle. The high-energy factor rating is the result of using no energy unless hot water is actually requested. This allows a household to reduce its hot water heating energy consumption by as much as 50%.

The average annual energy bill for a household of 4 people is \$2,400 per year or \$200 per month. A water heater usually accounts for 18.5%¹ of a household's energy bills, which equals \$444 per year. A tankless water heater would reduce that cost by 50%, which equals \$222 in savings per year. The US Census indicated there were 115 million households in the United States in the year 2000. Using the figures above, the U.S could save almost \$26 billion per year by moving to tankless water heating systems.

Water tank heaters should not be allowed to participate in the Energy Star program at any level. Tank water heaters are dangerous and represent the largest source of wasted energy in the United States today. Using energy to heat water that is never used is a problem that the Energy Star program should help erase. Heating water on demand is a much smarter and more efficient approach to consuming energy.

The D&R International Analysis reported a few misconceptions that we would like to clear up. The instantaneous water heating industry has numerous manufacturers providing a wide variety of tankless water heaters to choose from, which are readily available from well-known and well-respected retailers such as Lowe's and Home Depot. The industry has seen consistent growth over the last 20 years and the list of available products continues to grow and improve with time.

The cost associated with upgrading a household's infrastructure to support a higher draw rate is relatively low. The majority of circuit breaker panels and water heaters are located in a household's basement or garage making the upgrade easy to perform by either the consumer or a certified electrician. Installing tankless water heaters in new construction is simple.

(more)

¹ Source: DOE/EIA-0314(93), Housing Characteristics 1993.

Here is a list of manufacturers that produce instantaneous water heaters should D&R International or the Department of Energy question sufficient product availability.

Eemax	www.eemaxinc.com
Envirotech	www.envirotech.com
Paloma Industries	www.palomaindustries.com
Rinnai	www.rinnaina.com
Seisco	www.seisco.com
SETS	www.gotankless.com
Stiebel Eltron	www.stiebel-eltron-usa.com
Takagi	www.takagai-usa.com
Tankless Systems	www.tankless.com
Niagara	www.tanklesswaterheater.com

The cost of a tankless water heater currently ranges from \$600-800. However, should volumes increase above one million units per year, prices quickly would fall in line with the same price structure available now for tank water heaters.

Please call with questions. We would be happy to provide the backup that proves the business case for electric instantaneous tankless water heating systems.

Sincerely,

Gary Gordon
CEO/President
Envirotech Systems Worldwide, Inc.
Phone: (800) 251-6612, ext. 8606
Web: www.envirotech.com

GG/rh